CHAPTER 1

INTRODUCTION

Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization, can alter natural drainage patterns and add pollutants to the rainwater and snowmelt that runs off the earth's surface and enters our Nation's rivers, lakes, streams, and coastal waters. A number of recent studies by the U.S. Environmental Protection Agency (EPA), State water pollution control authorities, and various universities have shown that storm water runoff is a major source of water pollution, declines in fisheries, restrictions on swimming, and these conditions limit our ability to enjoy many of the other benefits that the Nation's waters provide.

In response to this problem, the States and many municipalities have been taking the initiative to manage storm water more effectively. In acknowledgement of the importance of the storm water problem, the Congress has directed EPA to undertake a wide range of activities, including providing technical and financial assistance to States and other jurisdictions to help them improve their storm water management programs. In addition, through recent amendments to the Clean Water Act, the Congress has instructed EPA to develop a regulatory program for certain high priority storm water sources.

In carrying out its responsibilities, EPA is committed to promoting the concept and the practice of preventing pollution at the source, before it can cause environmental problems costing the public and private sector in terms of lost resources and the funding it takes to remediate or correct environmental damage.

1.1 PURPOSE OF THIS GUIDANCE MANUAL

This manual provides general guidance on developing and implementing a Storm Water Pollution Prevention Plan for industrial facilities. Owners and operators of industrial facilities will find that putting together a Storm Water Pollution Prevention Plan is a straightforward process that can be accomplished by facility managers and employees.

EPA is publishing this manual for several reasons. The primary purpose of this manual is to provide guidance for industrial facilities that are subject to requirements under EPA's General Permits for storm water discharges associated with industrial activity. Facilities located in the 12 nondelegated States or 6 Territories are subject to these requirements (see Section 1.6 for a list of States and Territories subject to EPA General Permit requirements). EPA anticipates that most storm water discharge permits issued under the Storm Water Program will require a pollution prevention plan. Throughout this manual, specific EPA General Permit pollution prevention requirements are given in the shaded boxes as seen below. Although the requirements for a Storm Water Pollution Prevention Plan may vary from one permit to another, and from State to State, EPA expects that most of the general concepts described in this manual are common to all plan requirements. Please also note that, although this manual presents EPA General Permit requirements that apply to facilities located in nondelegated States and Territories, some of the nondelegated States required modifications or additions to the pollution prevention plan requirements to ensure that the permit complies with State laws and standards. Therefore, it is important that all facilities located in delegated States, as well as nondelegated States, read their permits to determine whether there are

any special conditions. This manual is not intended in any way to substitute for binding legal requirements pursuant to National Pollutant Discharge Elimination System (NPDES) permits.

EPA GENERAL PERMIT REQUIREMENTS
Storm Water Pollution Prevention Plans Part IV A Storm Water Pollution Prevention Plan shall be developed for each facility covered by this permit. Storm Water Pollution Prevention Plans shall be prepared in accordance with good engineering practices. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. In addition, the plan shall describe and ensure the implementation of practices which are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit. Facilities must implement the provisions of the Storm Water Pollution Prevention Plan required under this part as a condition of this permit.

In addition to providing guidance for facilities that are subject to storm water permit requirements, this manual contains information that is generally useful for controlling storm water pollution from almost any type of developed site. EPA hopes this manual is widely used in furthering the prevention of pollution at its sources and the adoption of management practices that help us protect the overall quality of the environment.

EPA is also issuing a guidance manual on Best Management Practices (BMPs) for construction activities. If you are subject to requirements under the general permit for storm water discharges associated with construction activities, that manual is designed to help you comply with those somewhat different requirements.

1.2 ORGANIZATION OF THIS GUIDANCE MANUAL

This manual is presented as a user's guide to Storm Water Pollution Prevention Plan requirements. Step-by-step guidelines and accompanying worksheets will walk you through the process of developing and implementing a Storm Water Pollution Prevention Plan. This approach allows you to complete this process in the simplest and most efficient way. The worksheets are designed to help you organize the required information. The remainder of this manual is divided into three sections: Chapter 2 provides information on how to develop a plan; Chapter 3 serves as a resource for selecting activity-specific Best Management Practices (BMPs); and Chapter 4 discusses site-specific BMPs. As you complete each section, you will move through each of the following steps and end up with a fully developed Storm Water Pollution Prevention Plan. Each step is important and should be completed before moving on to the next step. The five major phases involved in developing and implementing your plan are as follows:

Phase 1	-	Planning and Organization
Phase 2	-	Assessment
Phase 3	-	BMP Identification
Phase 4	-	Plan Implementation
Phase 5	-	Evaluation

Chapter 2 provides step-by-step guidance for completing each of these phases. The Organization Phase starts the process by helping you to get organized and by identifying who is going to develop and implement the plan and by identifying site-specific pollution prevention objectives. The Assessment Phase involves gathering information about your site and identifying potential sources of storm water pollution. Using the information collected during the Assessment Phase, you can begin to design the storm water management program that best suits your site. During the BMP Identification Phase, you will evaluate the required baseline BMPs and select other preventive measures. The fourth stage of the Storm Water Pollution Prevention Planning process is the Implementation Phase, during which you put the plan into action. The final step, the Evaluation Phase, allows you to determine if your plan is actually accomplishing your pollution prevention objectives. Periodic reviews, inspections, and evaluations will allow you to keep the plan effective and up-to-date.

In Chapter 3, which details activity-specific BMPs, you will find a number of measures you can use to prevent or reduce the contamination of storm water caused by specific industrial activities. Chapter 4 describes site-specific BMPs. From the list of site-specific BMPs, you can select prevention and control measures that are most appropriate for the physical characteristics of your facility. A combination of these types of BMPs may be most appropriate for your site.

In addition, there are several appendices located at the end of this manual. Appendix A lists the references used to develop this manual. Appendix B includes a glossary of terms. Appendix C provides a model of what a pollution prevention plan might look like for a small industry. Appendix D provides State and Federal storm water and pollution prevention contacts and additional information on pollution prevention. Appendix E provides technical and design fact sheets for some of the storm water BMPs described in Chapter 4. Appendix F describes tests for non-storm water discharges. Appendix G compares Storm Water Pollution Prevention Plan requirements with plan requirements under other environmental programs. Appendix H is a list of reportable quantities for hazardous substances under 40 CFR Parts 117 and 302. Appendix I is the list of water priority chemicals under Emergency Planning and Community Right-to-Know Act (EPCRA), Section 313. Appendix J includes a table of the monitoring requirements that are contained in EPA's General Permits.

1.3 SCOPE OF THIS MANUAL

This manual provides useful information on many pollution prevention and best management practices which you can use to prevent or reduce the discharge of sediment and other pollutants in storm water runoff from your site. This manual describes the practices and controls, tells how, when, and where to use them, and how to maintain them. However, the effectiveness of these controls lies fully in your hands. Although specific recommendations will be offered in the following chapters, keep in mind that careful consideration must be given to selecting the most appropriate control measures based on site-specific features, and on properly installing the controls in a timely manner. Finally, although this manual provides guidelines for maintenance, it is up to you to make sure that your controls are carefully maintained or they will prove to be ineffective.

This manual describes the EPA General Permit requirements for pollution prevention plans. However, requirements may vary from permit to permit. You should read your permit to determine the required components of your pollution prevention plan. Although this manual describes "typical" permit requirements, do not assume that the typical permit requirements described in this manual are the same as your permit requirements even if you are included under an NPDES general permit for storm water discharges associated with industrial activities. Permit conditions may vary between different permits and/or different versions of the permit.

EPA has issued a number of regulations addressing pollution control practices for different environmental media (i.e., land, water, air, and ground water). However, this manual focuses on identifying pollution prevention measures and BMPs specifically for industrial storm water

discharges and provides guidance to industrial facilities on how to comply with storm water permits.

Although Storm Water Pollution Prevention Plans primarily focus on storm water, it is important to consider the impacts of selected storm water management measures on other environmental media (i.e., land, air, and ground water). For example, if the water table is unusually high in your area, a retention pond for contaminated storm water may also lead to contamination of a ground water source unless special preventive measures are taken. Permittees must take these issues into consideration in selecting appropriate pollution prevention measures and should make certain that adoption of storm water measures is consistent with other Federal, State, and local environmental laws. For instance, under EPA's July 1991 Ground Water Protection Strategy, States are encouraged to develop Comprehensive State Ground Water Protection Programs. Your facility's efforts to control storm water should be compatible with the ground water protection objectives reflected in your State's program.

1.4 DEFINITIONS

As you use this manual to select pollution prevention approaches, you will see two key phrases used frequently: "pollution prevention plan" and "best management practice." A solid understanding of these terms is very important in meeting the goals of storm water management discussed above.

Pollution Prevention Plan

The first term of importance is "storm water pollution prevention plan." As mentioned in Section 1.1, this manual is designed to help you to prepare and implement a Storm Water Pollution Prevention Plan. As you will learn in Chapter 2, Storm Water Pollution Prevention Plans consist of a series of steps and activities to, first, identify sources of pollution or contamination on your site, and, second, select and carry out actions which prevent or control the pollution of storm water discharges.

Best Management Practice

The other concept used throughout this manual is "Best Management Practice" or BMP. BMPs are measures or practices used to reduce the amount of pollution entering surface water, air, land, or ground waters. BMPs may take the form of a process, activity, or physical structure. Some BMPs are simple and can be put into place immediately, while others are more complicated and require extensive planning or space. They may be inexpensive or costly to implement. Although BMPs are used in many environmental programs, the BMPs presented in this manual are specifically designed to reduce or eliminate pollutants in storm water discharges. Chapter 2 describes the baseline BMP requirements of EPA's General Permit for storm water discharges associated with industrial activity. Chapters 3 and 4 describe numerous specific BMPs that will help you comply with these requirements.

1.5 GOALS OF STORM WATER MANAGEMENT

Federal, State, and local storm water management programs have a common goal:

To Improve Water Quality By Reducing the Pollutants Contained In Storm Water Discharges

Meeting this goal is a difficult challenge for many reasons. For example, the original sources of the pollutants transported in storm water can be diffuse or spread out over a wide area. So, small oil and grease spills at hundreds of different facilities within a single city can collectively represent a major pollution problem. In addition, the nature of storm water is such that the amount of pollutants that enter receiving waters will vary in accordance with the frequency, intensity and duration of rainfall and the nature of local drainage patterns. Considering the wide variety of types of industries in the United States and the wide range of materials and chemical compounds that are used as part of different industrial activities, a site-specific pollution prevention plan tailored for each facility is considered the most effective, flexible, and economically practical approach to achieve effective storm water management.

The pollution prevention plan approach required by EPA gives facilities flexibility to establish a site-specific storm water management program to meet Best Available Technology/Best Control Technology (BAT/BCT) standards required by the Clean Water Act instead of imposing numerical discharge limitations. Yet, the BMP framework established by the pollution prevention plan requirements must be fully implemented to meet these standards.

1.6 SUMMARY OF THE STORM WATER PROGRAM

Storm water discharges have been increasingly identified as a significant source of water pollution in numerous nationwide studies on water quality. To address this problem, the Clean Water Act Amendments of 1987 required EPA to publish regulations to control storm water discharges under NPDES. EPA published storm water regulations on November 16, 1990, which require certain dischargers of storm water to waters of the United States to apply for NPDES permits. "Waters of the United States" is generally defined as surface waters, including lakes, rivers, streams, wetlands, and coastal waters. NPDES storm water discharge permits will allow the States and EPA to track and monitor sources of storm water pollution. According to the November 16, 1990, final rule, facilities with a "storm water discharge associated with industrial activity" are required to apply for a storm water permit. EPA has defined this phrase in terms of 11 categories of industrial activity that include: (1) facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR Subchapter N; (2) "heavy" manufacturing facilities; (3) mining and oil and gas operations with "contaminated" storm water discharges; (4) hazardous waste treatment, storage, or disposal facilities; (5) landfills, land application sites, and open dumps; (6) recycling facilities; (7) steam electric generating facilities; (8) transportation facilities, including airports; (9) sewage treatment plants; (10) construction operations disturbing 5 or more acres*; and (11) other industrial facilities where materials are exposed to storm water*. Operators of industrial facilities that are Federally, State, or municipally owned or operated that meet the above description must also submit applications. If you have questions about whether or not your facility needs to seek permit coverage, contact the EPA Storm Water Hotline at (703) 821-4823.

Storm water discharges associated with industrial activity that reach waters of the United States through Municipal Separate Storm Sewer Systems (MS4s) are also required to obtain NPDES storm water permit coverage. Discharges of storm water to a combined sewer system or to a Publicly Owned Treatment Works (POTW) are excluded.

The storm water regulation presents three permit application options for storm water discharges associated with industrial activity. The first option is to submit an individual application consisting of Forms 1 and 2F. The second option is to participate in a group application. The third option is to file a Notice of Intent (NOI) to be covered under a general permit in accordance with the

*On June 4, 1992, the United States Court of Appeals for the Ninth Circuit remanded the exemptions for manufacturing facilities which do not have materials or activities exposed to storm water and for construction sites of less than five acres to the EPA for further rulemaking.

requirements of an issued general permit. Regardless of the permit application option a facility selects, the resulting storm water discharge permit will most likely contain a requirement to develop and implement a Storm Water Pollution Prevention Plan.

NPDES permits are issued by the State for States that have been delegated NPDES permitting authority or by EPA for States that have not been delegated NPDES permitting authority. Therefore, the specific EPA General Permit requirements discussed in this guidance manual apply only to facilities located in one of the 12 nondelegated States or Territories (Alaska; Arizona; Idaho; Louisiana; Maine; Massachusetts; New Hampshire; New Mexico; Oklahoma; South Dakota; Texas; the District of Columbia; Puerto Rico; Guam; American Samoa; Northern Mariana Islands; Trust Territory of the Pacific Islands; Indian lands in Alabama, California, Georgia, Kentucky, Michigan, Minnesota, Mississippi, Montana, North Carolina, North Dakota, New York, Nevada, South Carolina, Tennessee, Utah, Wisconsin, Wyoming; located within Federal facilities or Indian lands in Colorado and Washington; and located within Federal facilities in Delaware). EPA expects, however, that the Federal general permit will be used as a model by NPDES-authorized States, tailored to meet State-specific conditions. Even though storm water permit requirements will vary from State to State depending on water quality concerns and permitting priorities for the permitting authority, EPA expects that most NPDES storm water discharge permits will contain Storm Water Pollution Prevention Plan requirements similar to the requirements presented in this manual.